NavMed 369

UNITED STATES NAVY

MEDICAL NEWS LETTER

Editor - Captain L. B. Marshall, MC, USN

Vol. 16 Friday, 8 September 1950 No. 4

TABLE OF CONTENTS

Dextran, Etc. as Plasma Substitutes...2
Antibiotics in Amebiasis 3
Constructing a Colostomy.....6
Jaundice, Diagnosis of.....8
Vascular Lesions in Young Diabetics..12
Diabetes Mellitus.....12
Carcinoma of the Lung.....13
Pharmacology of HPC.....16
HPC in Rheumatic Fever..... 17
Aureomycin in Leprous Eye Sequellae..... 19
Streptomycin in Granuloma 19
Recent Research Reports..... 20
NC Blood Bank Course..... 22
Atomic Lectures Available 23
From the Note Book 23

Circular Letters:

Collection of Air and Breath Samples for Radon Content ..... BuMed..... 25
Submission of Psychiatric Unit Report..... BuMed..... 25
Medicinal Gases and Cylinders; Color Marking of ..... BuMed..... 26
Venereal Disease; an Agreement for the Control of ..... Joint ltr..... 27
Property Exchange and Accounting in Evacuation of Patients ... Joint ltr..... 29
Syphilis; Annual Review of Personnel with History of ..... BuMed..... 31
Publication of Research Reports; Funds Allotted for ..... BuMed..... 32

* * * * * *

Dextran in Supportive Therapy, with Comments on Periston and Gelatin: The use of dextran as a substitute for plasma was suggested by the Swedish physiologists Grönwall and Ingelman in 1943 (published in 1944). Further studies on human patients were done by Thorsen of Sweden and Bull, et al. of England (see Medical News Letter of 25 February 1949, pp. 9 and 11). The dextran that these authors used was called "dextran Ph" and was prepared by Pharmacia of Stockholm, Sweden. Thorsén in summary said, "Dextran Ph is a polydispersoid polymer of glucose with a molecular weight conforming to that of albumin. It is totally eliminated from the body and is nontoxic. It is very useful as a substitute for blood and plasma in cases where an increase in blood volume or in colloid osmotic pressure is desired."

The authors (J. S. Lundy, H. K. Gray, and W. McK. Craig) of the article now presented were interested in dextran because they hope that it represents a type of material that would stay in the circulation and support the circulating volume in the cardiovascular system. The skepticism today regarding the use of plasma because of the hazard of homologous serum jaundice and virus infection, and the question of whether or not irradiating of plasma frees it from this hazard; the complications involved in blood transfusions carried out on a large scale (which are increasing as more is learned about blood groupings, subgroups, the Rh and Hr factors, and so forth); the cost of operating blood banks; the danger of errors resulting in the administration of incompatible blood in war or in civilian practice; and the potential problem of preparing for another war are all factors which increase the importance of the study and use of a material such as dextran which can be given in an emergency without previous laboratory examination and can wholly or in part substitute for blood.

In 1946, the authors began to use dextran clinically in this country. Several hundred bottles of the 380 cc. size have been used with what appears to be benefit in combating anticipated shock or in treating actual shock. The quantity given to different patients has varied from 1 to 3 bottles. It is estimated that from 900 to 1,000 patients were treated with this material. Since the material is not a substitute for blood, the latter has been used when indicated because of blood loss or anemia. The early administration of dextran in major operations has seemed to be beneficial. The greatest number of patients to whom dextran has been given have been those undergoing neurosurgical procedures, especially the thoracic lumbar sympathetic operation for hypertension. It has, however, also been used by the authors in operations on the upper part of the abdomen, large bowel, and pelvis, and in orthopedic operations and scattered miscellaneous cases. Untoward reactions (rash, urticarial blotches with pruritus, feeble pulse, anxiety, dyspnea, and apprehension) were observed in a few unanesthetized patients who were given a dextran preparation supplied by an American manufacturer. Such reactions were not observed with use of the Swedish preparation, which produced only a slight puffiness of the lips lasting for 20 minutes in 1 unanesthetized patient. Other substances that have been tried are gelatin, isinglass, pectin, acacia, and periston. The clinical impression with the use of gelatin (molecular weight of 43,000) was that one needed

a stimulant such as ephedrine more often than when dextran was used. Periston (polyvinyl pyrrolidone), produced in Germany during World War II, was used in more than 100,000 instances in the Wehrmacht as a 2.5 percent solution, i. e., 2.5 percent polyvinyl pyrrolidone disolved in standard Ringer's solution. It has been recommended that periston be used in 3.5 percent solution, because 3 percent solution has approximately the same colloidal osmotic pressure as plasma. The authors also found that in a very small series of patients the 3.5 percent solution seemed to maintain the blood pressure better than the 2.5 percent solution.

Dextran has proved efficacious as a plasma substitute in case of burns and has produced a sustained increase in the venous return in patients with surgical shock or hemorrhage. In a few cases, when even blood transfusions in quantity have failed to support the patient as expected, the authors have been greatly gratified by the beneficial effect of dextran and have felt that it was lifesaving in some of the cases. In such cases, materials such as dextran, periston, and gelatin are definitely indicated for supporting circulating volume in the cardiovascular system. They remain within the vessels much longer than can be expected of blood or plasma or solutions of crystalloid materials. The authors have observed no harm come from the use of the imported solutions of dextran, or when gelatin or periston were used. Efforts are being made to interest manufacturers in this country in dextran or, if possible, to get the Swedish company, which patented its process in 1949 in this country, to start manufacturing it here.

In the discussion which followed presentation of this paper, it was emphasized that dextran is not a blood substitute, and that it ought not be administered in cases in which whole blood should be given. Dextran is, rather, a substance which will support circulating blood volume. It is simple to use, relatively cheap compared with the cost of blood, and reduces tremendously the drain on the blood bank; this is a considerable factor in areas where the difficulties of obtaining blood may be prominent or when supportive therapy only is desired. (Arch. Surg., July '50, J. S. Lundy et al.)

* * * * * *

Treatment of Amebiasis with Bacitracin and Other Antibiotics: A study was undertaken to determine the efficiency of bacitracin and other antibiotics in the therapy of amebiasis, and to correlate, if possible, alterations of bacterial flora with results of therapy.

Material and Methods. The patients studied were either in or out patients at various hospitals in the New York City area. The diagnosis of amebiasis was established by the demonstration of E. histolytica in at least 2 stool specimens and confirmed by iron hematoxylin staining. Bacteriological studies and counts of intestinal organisms were performed by standard cultural and dilution methods. Casual stool specimens were examined for E. histolytica by direct smear and zinc sulphate centrifugal flotation during and after therapy at as frequent

intervals as practical, usually weekly, for a month after treatment, and then at least monthly. One or more series of post-cathartic specimens was examined in many patients and in some, this was done at the end of 3, 6, 9, and 12 months after therapy in addition to the casually submitted specimens at weekly or monthly intervals.

Results. Bacitracin: Fifty-one patients with amebiasis varying in severity from asymptomatic to fulminating dysentery were treated with bacitracin administered as tablets orally. Total daily doses varied from 40,000 to 120,000 units and treatment extended for from 5 to 20 days. Of the 51, 13 patients were asymptomatic, 30 were mildly symptomatic, and the remaining 8 were moderately or seriously ill requiring hospital care. The latter had demonstrable ulceration and/or necrosis of varying extent between the sigmoid colon and anus.

Only 3 patients of the 51 treated failed to lose their amebae during therapy with bacitracin. However, subsequent to treatment, 14 additional patients had positive stools again in from 6 to 350 days after the last dose of bacitracin. With 4 exceptions, all the relapses occurred in less than 35 days. Nine patients who were treatment failures received a second course of therapy, and of these, 6 again relapsed. Three of the latter were treated for the 3d time and 2 failures occurred. Thus, apparent parasite cure after the first course of treatment occurred in 34 of the 51 patients, or 66 percent, while additional retreatment had a probability of a successful result of only 33 percent. Extension of therapy beyond 10 days or increase in dosage above 80,000 units did not significantly enhance the probability of cure beyond 66 percent. The patients with continuously negative stools were observed an average of 212 days, during which time an average of 12 specimens were examined.

It is difficult to evaluate the response to various forms of medication in patients with minor gastrointestinal symptoms. Therefore the remarks are limited to the 8 moderately or seriously ill patients with severe amebic dysentery and objective mucosal evidence of active disease. The oral administration of from 50,000 to 160,000 units daily of bacitracin was accompanied by striking clinical improvement, control of dysentery within a few days, disappearance of amebae from the stools and surface lesions, and complete healing in from 4 to 14 days.

Aureomycin: The authors have studied the use of aureomycin in the treatment of 33 patients with amebiasis. Thirty-two asymptomatic or mildly symptomatic cases of amebiasis were treated with 1 or 2 Gm. of aureomycin given daily in divided doses for 10 days. One additional severe case of amebic dysentery received a total of 23.25 Gm. during 9 days without clinical benefit or disappearance of amebae. In all the other patients E. histolytica disappeared during treatment. In one of the latter, E. histolytica reappeared in the stools 15 days after the last dose of aureomycin. The period of observation in the remaining 31 cases, which were still negative at time of writing, varied from 2

weeks to approximately 1 year. The apparent cure rate was greather than 90 percent. Initially, considerable difficulty was experienced in therapy, because of concomitant vomiting or diarrhea. These symptoms occurred in 20 percent of the patients treated, and in some resulted in discontinuance of therapy after 3 or 4 days. E. histolytica did not disappear from patients who received the drug during so short a period of therapy. More recent supplies of the drug produce less vomiting than formerly. The use of 1 Gm. a day, which seems as effective as 2 Gm., is likewise associated with less toxicity.

Other Antibiotics: Chloramphenicol, 1.0 Gm. daily for 7 days, was ineffective in 1 severe case of amebic dysentery; in 5 other asymptomatic patients 3 Gm. daily for 7 or 8 days failed to eliminate the amebae.

Polymyxin B in daily doses of 400 mg. for 10 days was likewise ineffective in 6 patients with amebiasis, although in 1 additional case the amebae disappeared and did not return in the stool during 3 months of observation.

During therapy with these agents, lactose fermenting Gram-negative bacilli and occasionally, clostridia disappeared from the stool, but the enterococci were not uniformly affected with the doses employed and E. histolytica was apparently unaffected.

Discussion. Bacitracin: The authors report bacitracin was efficacious in terminating acute attacks of amebic dysentery, and rid the stools of E. histolytica during and after treatment in approximately two-thirds of patients treated. This drug may be successful where other agents have failed. The prompt control of symptoms and healing of lesions in severe cases is striking. The probability of cure from a single course of treatment is 66 percent. The recommended dosage is 80,000 units daily for 10 days. Toxicity from oral medication is negligible.

Aureomycin: The authors' experience with this drug was more limited and the failure or relapse rates could not be estimated. However, it appears that definitive cures of amebiasis with aureomycin will exceed those obtained with bacitracin and probably other amebicidal agents now in use. Further trial in severe clinical cases will determine its activity in controlling acute attacks of amebic dysentery and healing of ulceration. Continued observation of treated cases is essential to determine whether late relapses occur. At the present stage of the follow-up observations, the cure rate is 93 percent. The recommended dosage is 2.0 Gm. daily for 10 days. Approximately 20 percent of patients receiving 2 Gm. or more of the drug daily had nausea and vomiting.

Other Antibiotics: Chloramphenicol was found ineffective in 6 cases of amebiasis including 1 severe case of dysentery. Polymyxin B apparently eliminated E. histolytica from only 1 of 7 patients treated.

Bacitracin and aureomycin represent important and potent additions to the agents available in the chemotherapy of intestinal amebiasis. (Am. J. Trop. Med., July '50, H. Most et al.)

* * * * * *

The Construction of a Satisfactory Colostomy: Abdominoperineal resection with a permanent colostomy remains the operation of choice for carcinoma of the rectum, i. e., for all lesions at or below the peritoneal reflection. A colostomy should not present a serious handicap to any patient who, with careful instruction and encouragement, can be taught to manage his colostomy so that he can usually resume the normal social and economic activities to which he was accustomed before he acquired his carcinoma. It is believed that a permanent colostomy is a small price to pay for an operation which has a low mortality, low morbidity, and which offers the greatest prospect for cure in carcinoma of the rectum. Abdominoperineal resection is associated with the lowest incidence of pelvic recurrence.

A satisfactorily functioning colostomy which can be cared for with a minimum of inconvenience to the patient presupposes that at the time of the abdominoperineal resection a well-planned, well-constructed colostomy was carried out. Although there are several minor variations in the manner in which the colostomy is constructed, even within the Lahey Clinic, certain fundamental principles are adhered to which are of importance for the satisfactory function of an abdominal colostomy. Unless one can expect a satisfactory degree of involuntary and sphincter control, the author believes that a colostomy in the abdominal wall where it can easily be reached for irrigation and cleansing is much preferable to one in the perineum. Many ingenious technics have been devised to promote some degree of mechanical control of abdominal colostomies. These have not proved satisfactory. A well-formed colostomy, a constipating diet and careful irrigation every other day or 3 times a week will usually lead to a very satisfactory degree of control. Few of the author's patients wear anything over their colostomies except a pad of gauze or toilet tissue. It is rare for a patient who has had his colostomy for over a year to report more than one or two "accidents" during the previous year. These "accidents," by which is meant a bowel movement at any other time than with irrigation, usually consists of a small, well formed stool, and the patient can, as a rule, recall the exact dietary indiscretion which produced it.

Location of Colostomy. The colostomy should be located in the convex portion of the lower abdominal wall where it can easily be manipulated at the time of irrigation, and where it can easily be covered by a small pad held in place by a simple elastic waist band, from 6 to 8 inches wide, in men, or a girdle or corset in women. If it is placed low in the iliac fossa it is more difficult to irrigate and the dressing is less conveniently held, particularly in men. If the colostomy is too near the umbilicus or the area of the pubic hair, it increases the problem of proper cleansing. Many surgeons use a low midline

incision for their resection. If this incision is used, the author prefers to bring the colostomy out through a stab wound in the iliac muscles to the left of the incision. If a left rectus incision is made, the colostomy is brought out through the split rectus muscle. This provides better support than a colostomy brought out between the recti in the midline incision, although there is no real objection to this site. Moreover, in the occasional patient with a short sigmoidal loop it may be difficult to bring out a sufficient length of colon through the midline without the mobilization of the entire left colon. The advantages of bringing the colostomy out through a left rectus incision are that it eliminates the need for any additional incision and it is easier to close the left lateral gutter if the surgeon so desires. On the other hand, if the colostomy is brought out through a stab wound it is felt that a more secure closure of the laparotomy incision can be made. A lateral stab wound colostomy also eliminates the problem of the colostomy in the resuture of the laparotomy wound if a dehiscence of the incision should occur. The lateral gutter can be closed even with a lateral stab wound colostomy, if desired. If one elects to close the lateral gutter at all it must be closed securely and completely, otherwise it is preferable to leave it wide open.

Height. The most satisfactory height to exteriorize the segment of colon is one that, after the usual shrinkage has occurred, will leave one with a colostomy which will project at least 1 inch above the surface of the skin. This means that at the time of operation it must come at least 2 inches above the surface of the skin without tension. It is to be remembered that all colostomies brought out under tension will inevitably retract. If the colostomy shrinks or retracts to the skin level or just above it, the patient will almost certainly require a future plastic procedure on his colostomy because of the stenosis which will occur. Not infrequently, the author brings too much colon out upon the abdominal wall at the time of operation; this is later trimmed to a height of 5 cm. In making a colostomy one must remember that if the patient has lost a large amount of weight, provision must be made for the subsequent increase in the fatty layer of the abdominal wall which will occur as the result of the elimination of the malignant lesion. There should be no reason for not having a sufficient length of colon out, because bowel can always be brought out to a sufficient height without tension by mobilization of the descending colon and splenic flexure.

On the other hand, there will sometimes be such a redundancy of the sigmoid that an ample length of colostomy can be exteriorized and at the same time there will be left too much redundant bowel within the abdominal cavity. Any redundancy of the intra-abdominal portion of the exteriorized segment interferes with function and proper irrigation of the colostomy. Sufficient sigmoid should be removed so that the descending colon and upper sigmoid will fall into a smooth curve from the posterior parietal attachment to the anterior abdominal wall.

Fixation. If the colostomy is exteriorized without tension, elaborate methods of fixation to the abdominal wall are not necessary. A considerable degree of fixation is, of course, provided by closure of the lateral gutter. In addition, when the end

colostomy is exteriorized through a left rectus incision, the tip of an epiploic appendage is incorporated in the suture, closing the peritoneum and posterior rectus sheath above and below the colostomy. A dry gauze dressing is placed against the bowel above and below the colostomy and on each side, and the clamp on the divided end of the bowel is incorporated in the dressing. In 24 hours, this clamp is shifted just enough to permit the introduction of a catheter for decompression, and again incorporated in the dressing. The lower dressings which are adherent both to skin and to bowel are not disturbed until the 4th postoperative day. No sutures are placed in the bowel wall for fixation purposes, because if necrosis should occur at the point of their introduction or if they should be pulled out as a result of sudden violent movement on the part of the patient, a fistula would result which would require extensive revision of the colostomy for satisfactory function and might even bring about a fatality from peritoneal soiling.

It is most important to be certain of the blood supply nourishing the exteriorized segment of bowel. If a stab wound is used it must be of sufficient size that it will support the bowel without interfering with its circulation. Tension on the colostomy segment as, for instance, when it is being withdrawn through the stab wound may result in tearing or thrombosis of the vessels nourishing the end of the bowel. The author routinely inspects the color of the exteriorized bowel on the evening of the day of operation. If the color is not completely satisfactory, this patient's colostomy must be frequently inspected during the next 12 to 24 hours. If the devitalized segment stops at or above the skin level, the patient is in no immediate danger but will, of course, require ultimate revision of his colostomy. If, however, the devitalized area extends below the skin level and viable bowel cannot be clearly seen above the level of the peritoneum such a patient should again be immediately operated upon and an adequate segment of viable bowel exteriorized. This complication will rarely occur if careful attention is given to the blood supply of the sigmoid at the time of operation, and the colostomy segment handled with care throughout the operative procedure. In this connection it must be remembered that most end colostomies in patients operated upon for carcinoma of the rectum are largely nourished by single marginal arteries. (Lahey Clin. Bull., July '50, B. P. Colcock)

* * * * * *

Diagnostic Problems in Jaundice: In the absence of excessive hemolysis, an increase of bile pigments in the blood or tissues indicates some type of abnormality at the "hepatocellular barrier," i. e., the aggregations of hepatic and reticuloendothelial elements that separate the blood-containing sinusoids from the bile capillaries. Bilirubin, on which the color of bile depends, is an iron-free derivative of hemoglobin formed by the action of reticuloendothelial cells at the site of the breakdown of red blood cells that is constantly taking place within the body. In its initial state the pigment "hemobilirubin" or "bilirubin-globin" is firmly conjugated with globin or with an albumin-like constituent of the serum complex. This bilirubin-protein compound is not excreted by the

kidney and fails to give a prompt direct color reaction with Ehrlich reagent. It is, however, readily removed from the blood by the liver, so that levels between 0.1 and 1 mg. per 100 cc. are maintained with remarkable constancy in the normal subject.

Many types of injury to the cells of the liver disturb the physiologic excretion of bilirubin. Important among these are certain viruses, toxic agents, anoxia, dietary deficiencies, excessive infiltration with fat or glycogen, and inflammatory reactions. In various clinical situations, more than one of these deleterious factors is implicated.

Retention Jaundice. Abnormalities of the hepatocellular barrier may cause jaundice by failure to clear the blood of hemobilirubin at the usual physiologic level. In these circumstances, no bile is detected in the urine and the serum contains only delayed indirect-reacting bilirubin. This condition is usually regarded as a functional derangement, as it may be familial and is unassociated with any abnormality of the liver demonstrable by histologic examination or by a large assortment of tests, except for delay in excretion of parenterally administered bilirubin. Excessive formation of bilirubin from increased destruction of blood (hemolytic jaundice) can be differentiated from retention jaundice by hematologic studies and by the determination that total stercobilin excretion is within normal limits. Physiologic hyperbilirubinemia occurs in from 2 to 3 percent of the general population. It gives rise to few symptoms except perhaps fatigability and nervous instability, which may be provoked in part by apprehensive parents and physicians. The bilirubinemia is seldom marked, and jaundice may become noticeable only after fatigue, physical exertion, intercurrent infections, and other conditions causing accelerated breakdown of blood cells. Retention jaundice may accompany or follow infectious hepatitis and in some cases may be the sole residual mark of the disease. Various other types of hepatic and reticuloendothelial injury may also casue a rise in the excretory threshold of bilirubin. Indeed, an increase of hemobilirubin in the blood is usually found in jaundice of both the obstructive and the hepatogenous types. A searching history, many months of observation and repeated hepatic function tests, and even liver biopsy, may be necessary to evaluate the significance of retention jaundice in certain patients.

Biliary Obstruction. The factor of biliary obstruction must be considered in every case of jaundice, since its presence is often indicative of serious extrahepatic conditions requiring surgical correction. Obstruction leads to dilatation and rupture of the intralobular and perilobular bile channels, which then communicate with the spaces of Disse and with the lymphatics of the liver. Through these channels all the constituents of bile, such as bilirubin, bile salts, and alkaline phosphatase, eventually gain entrance to the blood stream, where they may be demonstrated in increasing amounts. Itching and bradycardia are common symptoms of obstructive jaundice and are usually attributed to elevation of bile salts in the blood. It is common clinical experience that obstructive jaundice may cause but little itching when extensive parenchymal damage depresses the capacity for synthesis of bile salts by the liver. Bilirubin also is excreted readily by

the kidneys, and so the appearance of dark urine is often of greater early clinical significance than the appearance of jaundice. Alkaline phosphatase, however, is not eliminated by way of the urinary tract in the human being; the determination of this enzyme in the serum is, therefore, an important test by which the factor of obstruction can be recognized in complex hepatic problems with or without jaundice.

It is possible in about 90 percent of all cases of jaundice to recognize the disturbing mechanism by correlating the clinical features through a preliminary screening with the following tests: (1) calculation of the total serum bilirubin concentration, with determination of the immediate direct-reacting fraction, (2) the cephalin flocculation and thymol turbidity tests to detect active parenchymal damage and inflammatory changes, and (3) the serum alkaline phosphatase determination to discover obstructive factors. A large number of metabolic studies is available, but these are seldom necessary in the initial screening or in clear-cut cases. Reactions to these tests are especially useful in complex clinical problems; they may be quite selective. Often wide discrepancies, which depend in part on the nature and extent of the hepatic disorder, may be demonstrated in these test reactions.

Then too, the following nonsurgical conditions with jaundice are notably difficult to differentiate by clinical or laboratory tests from diseases requiring surgical management: (1) cholangitis and pericholangitis, (2) toxic degeneration of the liver, and (3) infiltrations of the liver by neoplasms or granulomas.

Cholangitis, pericholangitis and cholangiolitis may be caused by virus infections, or by sensitization of the ducts to drugs such as arsphenamine and cinchopen; or perhaps, the inflammatory reactions in the biliary tissues, like arthritis or nephritis, may be a manifestation of focal or systemic infection elsewhere in the body. Cholangitis also is frequently secondary to stasis, obstruction, and ascending infections in the common bile duct and its branches. When inflammation, edema, or scarring is confined to the biliary radicles or to the supporting structures of the liver, such as the tissues of the portal triads, the clinical picture is quite indistinguishable from that of extrahepatic obstructive jaundice. Often the metabolic functions of the liver, as galactose tolerance or synthesis of cholesterol ester, show more impairment when the obstructive process is intrahepatic, but it is hazardous to differentiate extrahepatic from intrahepatic jaundice by the reactions to these tests. Surgical visualization of the entire liver and biliary tract, rather than a needle biopsy, is indicated in all cases of persisting or increasing jaundice accompanied by a negative cephalin flocculation reaction, by a negative result of the thymol turbidity test, and by elevation in serum alkaline phosphatase. Even though an occasional surgical procedure may be futile, the ruling out of possible new growths, calculi, or stricture of the bile ducts, and the establishment of the type of lesion within the liver well justifies the procedure. Furthermore, patients with intrahepatic obstruction usually stand operation well and often actually seem benefited by surgical drainage of the bile ducts. The chief problem is to determine the length of justifiable

delay when obstructive jaundice is present. The risk of postponing surgical intervention is much greater in older patients, especially those with complete obstruction or those who have received no transfusions, plasma, or parenteral medication in recent months.

Toxic hepatitis is most commonly seen after exposure to hepatotoxic agents, such as chlorinated hydrocarbons, arsenic, and alcohol, which may produce disturbances of intracellular enzyme systems and metabolic derangements of the parenchymal cells, as well as actual necrosis. Fatty and hyaline infiltrations, hydremic swelling, irregularities of the lobular arrangement, altered structure and staining reactions, and prominent multinucleation may be demonstrable on biopsy. The liver is usually enlarged and firm. Jaundice is variable in intensity and the disturbances of metabolic function are unpredictable. In chronic carbon tetrachloride poisoning, for example, a relative lowering of serum cholesterol ester may be the only significant abnormal sign. The cephalin flocculation reaction may be negative or only weakly positive in these cases, unless injury is severe and active breakdown of tissue of the liver is also taking place. A negative reaction cannot, therefore, be used to exclude chronic hepatic damage in persons habitually exposed to potentially injurious substances. The serum alkaline phosphatase level usually is not elevated in toxic hepatic states, and this observation is often of great importance in ruling out conditions requiring surgical management.

Neoplastic involvement of the liver may be metastatic or may arise primarily from the hepatic or biliary tissues. The liver is usually enlarged, irregular, and firm. Jaundice and ascites may or may not be present. The differentiation from cirrhosis, hepatic abscess, granulomas, and intrahepatic thrombosis (Chiari's syndrome) is often difficult, since the laboratory findings and clinical features may be quite similar in all these diseases. In about one third of all cases of malignant tumors of the liver, the serum alkaline phosphatase is elevated. The cephalin flocculation reaction is usually negative, unless active cirrhosis is present or widespread disturbances of blood supply leads to anoxia and necrosis of hepatic tissue. It is doubtful that reaction to any combination of laboratory tests is ever sufficiently reliable to establish or rule out the diagnosis of malignant growth. Here again, if the diagnosis is at all questionable, surgical exploration is indicated for proper evaluation and management.

Much progress has been made during the past decade in the diagnosis of jaundice by laboratory aid. It is important to realize that limitations to the present methods still exist. In order to avail oneself of all the advantages of modern therapy, it is essential that the nature and extent of the disease be determined as accurately as possible. Prolonged rest in bed and costly medication should not be directed uncritically or by guess work. At present many laparotomies can be avoided, but one must still rely heavily on the surgeon to elucidate complex derangements of the liver. Perhaps by more careful correlation of the clinical

features with improved understanding of hepatic physiology, fewer diagnostic and therapeutic atrocities will mar case records. (Arch. Int. Med., Aug. '50, F. M. Hanger)

* * * * * *

Factors in the Rate of Development of Vascular Lesions in the Youthful Diabetic: The authors investigated the incidence of vascular lesions in the kidneys, retinas, and peripheral vessels of 282 patients with onset of diabetes between 15 and 30 years of age. Special attention was given to the duration of the diabetes and the character of control. The most striking finding in this series of patients was the relation of the degree of control to the development of retinitis, calcification of the arteries, and nephritis.

When the duration of diabetes was considered with the degree of control, the difference in the incidence of retinitis and calcified arteries was significant. Among patients surviving more than 20 years of diabetes, 90 percent of those who had maintained poor diabetic control developed retinitis, while in the fair control group only 18 percent had developed retinitis. Similarly, 96 percent in the poor control group developed calcified arteries, while only 65 percent in the fair control group showed x-ray evidence of calcified arteries. In 20 patients with good control (not of this series), in whom the disease had existed for 25 years, x-ray examination of the arteries showed no calcification, blood pressure and hearts were normal, urine contained no albumin, and the retinas were free from hemorrhages or exudates.

The character of control of diabetes was considered poor when coma had been present one or more times, when blood sugar values and urine tests were abnormal, when medical examinations were infrequent, and when the use of insulin had not been begun within a year of onset of diabetes. Fair control implied the early use of insulin, cooperation of the part of the patient in carrying out urine tests frequently, and having fairly regular blood and urine tests (which were occasionally normal) with examinations by a physician. Exceptional control occurred in only a few medal cases not included in this series.

The authors' figures point definitely to the important roles played by the 2 factors, duration of disease and degree of control, in the development of premature vascular lesions in diabetes. (Am. J. Digest. Dis., June '50, H. F. Root et al.)

* * * * * *

Diabetes Mellitus (Psychiatric Aspects of Therapy): Most diabetic patients unfortunately continue to fall far short of the ideal goal of normoglycemic control. In most cases, especially the milder ones, the reason continues to be mainly lack of patient cooperation. Emotional disturbances may be shown to exercise a measurable effect on glucose and ketone metabolism, but not sufficient to precipitate acidosis.

A study of patients who have repeated attacks of frank acidosis showed that such patients required more to explain their difficulties than instability or severity of their diabetes. They have, as a group, gross instability of personality organization, in many bordering on the psychotic, but no uniform pattern could be discerned. In such cases, simply focusing more carefully on the details of regulation accomplished little. It was found vital for the rehabilitation of such patients to recognize their antipathy to authority and their need for sympathetic social and psychiatric care, even at the sacrifice of some measure of perfect control. (New England J. Med., 20 July '50, S. B. Beaser)

* * * * * *

Carcinoma of the Lung: In a suspected case of carcinoma of the lung, after x-ray examination, the first diagnostic tool that is usually employed is bronchoscopy. After a negative bronchoscopic report, the physician too often dismisses carcinoma as a diagnosis. A careful survey of the literature on thoracic surgery should serve to correct this assumption, and should focus attention on the limited value of bronchoscopy in diagnosis. It will also perhaps suggest the prognostic significance of the negative bronchoscopic finding.

With the more frequent use of bronchoscopy, and the apparent increase in the incidence of bronchogenic carcinoma, the incidence of positive bronchoscopic findings is less than had been reported previously. On personal review of a group of 69 cases of carcinoma at Bellevue Hospital in which bronchoscopic examination was performed, there was indirect evidence of tumor in 17 percent, and a tumor was seen and biopsied in 38 percent. This is a total of 49 percent showing some evidence of carcinoma. Biopsy was positive in only 22 percent, however. Thus, less that 50 percent of cases can be expected to have a positive bronchoscopy.

Cytologic study of either sputum or bronchial washings may be a very helpful adjunct in early diagnosis. The success is based on the experience of the cytologist reading the slides, and given an experienced examiner, the percentage of proved positive diagnoses is quite high.

In patients with negative bronchoscopic findings, differential diagnosis may be difficult. Three main types of lesions may be considered: the peripheral circumscribed, or mass lesion; the lobar or segmental opaque lesion, presumably due to bronchial obstruction; and the cavitary lesion.

A peripheral mass may be a primary malignant, a metastatic, or a benign lesion such as "tuberculoma," adenoma, hamartoma, or bronchogenic cyst. In a series of 53 cases, undiagnosed preoperatively, Johnson, Clagett, and Good reported that 74 percent were found to be malignant. In 24 similar cases, Blades found 17 percent malignant lesions and 30 percent tuberculomas. In 86 cases, Grow et al. found 23 percent to be malignant. Resection is the treatment of choice for both the malignant and the benign lesions; therefore, early exploration is indicated, despite the absence of a positive preoperative diagnosis.

The case reports illustrate the importance of operation despite the absence of a positive pathological diagnosis.

Peripheral lesions resulting from bronchial obstruction, described variously as atelectasis, organizing pneumonia, and fibrosis, are difficult to diagnose accurately when the bronchoscopic report is negative. In 45 such cases undiagnosed preoperatively, Johnson et al. found 50 percent to be malignant. In a similar series of 35 cases Grow, Bradford, and Mahon found 31 percent malignant. Here, too, operation is indicated in all cases, since the benign lesions are best treated by resection, in view of the irreversible parenchymal changes, such as bronchiectasis, suppuration, and fibrosis.

In cases of peripheral parenchymal masses, it is difficult to determine with certainty the nature of the pathologic process even at operation. Therefore, it seems more rational to limit the resection to the pathologic area and to conserve as much normal lung tissue as possible. Lobectomy in peripheral tumors not involving adjacent lobes should be as curative as pneumonectomy. If the carinal and tracheal lymph nodes are involved, cure is not possible in the vast majority of cases, even with pneumonectomy. The carcinoma cells are then present in the peribronchial and peritracheal lymphatics, which cannot be removed, since block dissection, as in carcinoma of the breast, is not possible.

Cavitation may be the presenting finding in some patients. In the presence of a negative bronchoscopy, tuberculosis, lung abscess, and carcinoma should be considered. In tuberculosis with cavitation the sputum should be positive. If no acid-fast bacilli are found on repeated examination, or if a suspected benign lung abscess has not shown improvement on x-ray study after treatment, one should be suspicious of carcinoma, and exploration and resection are indicated.

In the differentiation of lung abscess from carcinoma as the cause of cavitation, several factors may be helpful. The history in abscess is usually that of an acute respiratory illness, often following closely the administration of a general anesthetic, or an episode of loss of consciousness, such as submersion, epileptic convulsions, or alcoholic stupor. The onset is usually rapid, and the illness acute, with fever, toxicity, and copious sputum. In carcinoma the onset is more apt to be gradual, and although the cough may be severe, it is usually not as productive after the excavation occurs, nor is the illness as severe. On x-ray examination the abscess cavity wall usually is smooth, whereas the carcinomatous cavity usually has a rough -- sometimes scalloped or serrated-- inner surface. In abscess, complete subsidence can usually be obtained with antibiotics, although a residual cavity may persist, requiring further treatment. In the cavity due to carcinoma, either from bronchial obstruction or erosion of the tumor, there will be little change in its appearance after treatment. The chronic lung abscess is probably best treated by resection, and it seems better to resect an occasional tuberculosis lesion than to permit carcinomas to become inoperable because one is afraid that they might be tuberculous.

Discussion. After repeated attempts to obtain a definite, positive diagnosis fail, surgical exploration is advisable in patients with parenchymal lesions and a negative bronchoscopy. The time factor, as in all neoplasms, is vitally important. Johnson, Clagett, and Good found that 28 percent of peripheral carcinomas presenting as mass lesions and 46 percent of carcinomas presenting as cases of bronchial obstruction were inoperable.

A survey of reported series of carcinomas of the lung reveals a low percentage of resections possible. Of the total number of cases of carcinoma seen, from 20 to 60 percent of patients did not have obvious clinical signs of inoperability and were therefore explored, but only approximately 21.5 percent were early enough to be resected. It is obvious, then, that if these rates are to be improved, earlier operation must be performed. Observation for more than 4 weeks in a suspected case is dangerous. In the series of 548 cases reported by Ochsner and Debakey there was a positive diagnosis in 68 percent at the time of exploration; 32 percent of the cases were undiagnosed when operation was done. In the series of Johnson, Clagett, and Good, in which 384 patients were explored, there was no diagnosis in 30 percent at the time of operation. Thus, operation must be done frequently without a positive diagnosis, which often can be obtained only by pathological examination of the resected specimen.

In a review of their series of carcinoma cases, Neuhof and Aufses came to the conclusion that the peripheral tumors were less likely to have lymph node metastases and, if there was no invasion in the chest wall, had a better prognosis. The author's experience, as well as that of Clerf and Herbut and Lambert, agrees with this, because the cases in which bronchoscopy was negative were much less likely to have invaded the mediastinum. In general, these cases had a higher percentage of resectability. Thus, a negative bronchoscopy in a case of carcinoma of the lung may have favorable prognostic significance.

With modern methods of surgical technic, major intrathoracic procedures have minimal risk. Brewer, Jones, and Dolley reported 1 death in 30 patients with nonmalignant tumors operated on who were suspected of having carcinoma, a mortality rate of 3 percent. In 200 cases, Grow et al. reported no mortality in the explored cases and a 4 percent mortality rate in the resected cases. In the author's series of 86 cases of all types, there was a total mortality rate of 4.7 percent. In the patients subjected to exploration only, there were 2 deaths in 24 cases, or a mortality rate of 8.3 percent. In the resected group of 62 cases, there were also 2 deaths, a mortality rate of 3.2 percent.

Conclusions. Less than 50 percent of carcinomas of the lung have a positive bronchoscopic biopsy, and a high percentage of peripheral lesions are malignant. The prognosis is better in most cases with a negative bronchoscopy. In the suspected case of carcinoma of the lung, early exploration is indicated, expecially when reversible inflammatory disease, such as tuberculosis or lung abscess, cannot be proved. Excision is indicated whenever possible, with as much conservation of normal lung tissue as possible, since most of the benign lesions are

treated best by resection. All patients in whom carcinoma of the lung is a strong possibility should have the benefit of exploratory thoracotomy, since the only hope of cure is complete excision, before the tumor has spread beyond the lung. (New England J. Med., 13 July '50, V. H. Kaunitz)

* * * * * *

Certain Aspects of the Pharmacology of 3-Hydroxy-2-Phenylcinchoninic Acid: In previous articles, the authors have shown that certain derivatives of cinchoninic acid exhibit an antidiuretic action, suppress the secretion of phenol red by the kidney, and stimulate the anterior pituitary causing a decrease of the ascorbic acid content of the adrenal glands. The 3-hydroxy-2-phenylcinchoninic acid has been found to be highly effective in relieving symptoms of acute rheumatic fever and possibly of other collagen diseases.

A method has been developed for the determination of 3-hydroxy-2-phenylcinchoninic acid, and the absorption, excretion, and distribution of the drug has been studied in rabbit, dog, and man. The acute and chronic toxicity of the drug has been investigated in several species of animals.

Neither acutely nor chronically does 3-hydroxy-2-phenylcinchoninic acid appear to be a very toxic substance. Gastric ulcers are produced in dogs with large doses, but have not been seen in the rat or monkey. Cinchophen is known to produce gastric ulcers in the dog, but apparently has not produced them in man. Dogs have been given 75 and 100 mg. per Kg. intravenously without causing death and, in fact, with only transient symptoms and changes in the electrocardiogram. Although 1 dog given 100 mg. per Kg. of drug orally apparently had an acute renal failure and died, others given either single or multiple doses of 100 mg. per Kg. have shown no evidence of renal damage. Neither 200 nor 400 mg. per Kg. given daily to young rats for 10 days gave any indications of toxicity. Dogs given 50 mg. per Kg. daily for 30 days exhibited no toxic symptoms, but those given 100 mg. per Kg. daily showed anorexia, lethargy, and loss of weight. Two monkeys given 50 mg. per Kg. per day for 30 days were completely free from any toxic symptoms.

The data obtained indicate that 3-hydroxy-2-phenylcinchoninic acid is absorbed when given orally in both the dog and man. It is probably also as well absorbed in the rabbit as in the dog. Low concentration of the drug obtained in plasma after oral administration may be due to its rapid degradation in the rabbit, rather than to lack of absorption. The peak of the concentration of drug in the plasma after oral administration is subject to considerable variation. Only a small amount of drug is excreted as such in the urine: least in the rabbit and most in the dog. The remainder is apparently degraded to some non-fluorescent substance. Because the apparent volume of distribution of the drug is in 9 to 15 percent of the body weight in different species, it is concluded that there is

no localization of drug in tissues. However, the drug is extensively bound to plasma proteins. (Bull. Johns Hopkins Hosp., July '50, E. K. Marshall, Jr. and E. H. Dearborn)

* * * * * *

The Effect of 3-Hydroxy-2-Phenylcinchoninic Acid upon Rheumatic Fever: It has been shown that 3-hydroxy-2-phenylcinchoninic acid (HPC) inhibits a water diuresis and produces a decrease of urine flow in diabetes insipidus, inhibits the secretion by the renal tubule of phenol red and of penicillin, increases the excretion of uric acid, and reduces the ascorbic acid content of the rat adrenal when the anterior pituitary is present. These facts suggested that HPC might be effective in diseases which respond to ACTH. This paper reports the results obtained in the use of HPC in acute rheumatic fever, chronic rheumatoid arthritis, bronchial asthma, and lupus erythematosus disseminatus.

The cases of rheumatic fever and rheumatoid arthritis selected for therapy were relatively unequivocal examples of these diseases. All cases were sufficiently ill to require hospitalization. Comparison with controls was not attempted in this exploratory trial.

Ten patients with acute rheumatic fever were treated: all had fever; 9 had objective arthritis; and 1 had a pericardial friction rub. The drug was administered for from 2 to 21 days, all patients receiving 20 mg. per Kg. on the first day, and 10 or 20 mg. per Kg. each day or alternate days thereafter. The daily amount was sometimes given as a single dose, but usually in one-third fractions at 0, 1, and 2 hours after breakfast, together with an equal quantity of sodium bicarbonate.

Ten patients with chronic rheumatoid arthritis were given HPC. All had moderate to severe joint deformities, but only a few had fever or objective evidence of active arthritis. The drug was administered for from 5 to 7 days in a daily dose of from 20 to 40 mg. per Kg.

HPC was also given to 3 patients with bronchial asthma and to 2 patients with disseminated lupus erythematosus. These patients were given the drug for from 7 to 10 days in a dosage of from 20 to 40 mg. per Kg. per day.

HPC promptly lowered the fever of patients with acute rheumatic fever, and had a marked effect upon the arthritis and malaise. In the dosage employed the complete termination of the attack did not occur in all cases, since 3 patients had definite relapse, 2 patients ran a low grade fever after cessation of drug and 2 patients had faint evidence of transient joint involvement. The effect of HPC upon rheumatic myocarditis cannot be judged from these few cases, but certainly the myocarditis is not as rapidly controlled by the drug as are the arthritis and fever.

Preliminary investigations have been made upon the mechanism of the effect of HPC upon rheumatic fever. One possible explanation is that HPC in some

way enhances the output or activity of anterior pituitary or adrenal cortical hormones. Studies of urinary output of 17-ketosteroids and of eosinophil counts yielded equivocal results and no definite conclusions can be made at this time. It can be said that the eosinophil counts during a course of HPC have never been observed to fall to zero, and in 1 case the eosinophils, during a 10 day course of HPC, rose from 300 per cu. mm. to 1500 per cu. mm.

A second explanation for the activity of HPC is that it is an antipyretic and analgesic and has no specific action upon the rheumatic process. Eight patients with fever, not due to any of the "collagen diseases," have been given HPC. Two patients with generalized carcinomatosis showed no change in fever on the same dosage schedule used for the rheumatic fever patients. One patient with a necrotic carcinoma of the maxillary sinus had a prompt fall in fever on 40 mg. per Kg. per day. Two children with acute leukemia ran a continuous fever of from 100° to 102° despite 40 and 60 mg. per Kg. per day, respectively. One of these children had fever of 103° on 2 occasions following blood transfusion in spite of a dosage of 60 mg. per Kg. per day of HPC. One patient with Hodgkin's disease showed no fall of fever while taking 40 mg. of HPC per Kg. per day for 7 days. Two patients with Hodgkin's disease showed prompt fall in temperature to normal on the same dosage. These results do not permit a simple answer at this time to the problem of antipyretic effect of HPC.

Although the effect of HPC upon chronic rheumatoid arthritis was modest, all cases showed subjective improvement and 2 patients had definite objective benefit. In order to assess the degree of this effect upon rheumatoid arthritis, the utilization of unbiased controls, and of other dosage schedules is required. The patients with disseminated lupus erythematosus showed objective improvement while on HPC, but the cases are too few in number to exclude the operations of chance. HPC did not influence the physical signs in the patients with chronic bronchial asthma.

It is the authors' impression that HPC is more effective when the total daily amount is given as a single dose or as quickly as possible within the limitations imposed by gastric irritation, than when spread over the greater portion of the day. Sodium bicarbonate will help to allay the gastric irritation without interfering with absorption. Aluminum hydroxide gel has been avoided because of its ability to adsorb acids. The dosage which is being used at present in acute rheumatic fever is 20 mg. per Kg. per day for from 7 to 14 days. HPC is insoluble in aqueous solutions and quite bitter, and for those children unable to take capsules, administration of the powder suspended in heavy chocolate syrup has been satisfactory. (Bull. Johns Hopkins Hosp., July '50, K. C. Blanchard et al.)

* * * * * *

Effect of Aureomycin in Ocular Complications of Leprosy: In a group of 30 patients with leprosy and ocular complications resulting from both the leprosy and the secondary invading organisms commonly found in the conjunctival sacs, both clinical and bacteriologic evidence indicated that improvement followed the use of aureomycin ophthalmic solution. It is the author's impression that many of the disabling and damaging effects, which follow secondary infections in patients having leprosy, can be prevented if the eyes can be kept relatively free from these invaders.

Treatment consisted of an instillation twice daily of aureomycin hydrochloride ophthalmic solution prepared by the addition of 5.0 cc. of distilled water to 25 mg. of aureomycin, 25 mg. of sodium borate, and 62.5 mg. of sodium chloride. The solution must be made up and used within 2 days' time. (A supply of aureomycin ophthalmic ointment had been distributed to each patient in the series. The universal response from the entire group was reported as burning and irritation of such a degree that not more than one or two applications of the ointment were attempted. This preparation was recalled.)

It was found that aureomycin ophthalmic solution, even when applied no more than once daily, effectively reduces the number of secondary invading organisms found in the conjunctival sacs of leprous patients, as was demonstrated by cultures. Clinical improvement of an unusual degree followed the use of aureomycin in this group of 30 patients. (Am. J. Ophth., July '50, D. C. Elliott)

* * * * * *

Streptomycin Treatment of Granuloma Inguinale: The lesions of 80 percent of patients with granuloma inguinale healed under treatment with a schedule of 18 Gm. of streptomycin given in divided doses of 0.6 Gm. every 4 hours over a 5-day period. Treatment failures were reduced to approximately 4 percent by re-treatment with a dosage of 4 Gm. per day over a period of 10 days.

The oral use of aureomycin and chloramphenicol may cause healing of lesions resistant to intensive therapy with streptomycin, but the authors' experience with these drugs is too limited to enable them to draw any conclusions. (Arch. Dermat. and Syph., Aug. '50, H. Pariser et al.)

* * * * * *

List of Recent Reports Issued by Naval Medical Research Activities:

Naval Medical Research Institute, NNMC, Bethesda, Maryland.

Summaries of Research, 1 July - 31 December 1949.

Studies of the Toxic Action of Gallium, 30 December 1949.

Observations on the Experimental Transmission of Japanese Encephalitis by Mosquitoes, 31 January 1950.

Variations in Body Temperature and in Performance Under Different Watch Schedules, 15 February 1950.

Dynamic Electrical Characteristics of the Squid Axon Membrane, 20 March 1950.

Field Trial of Shigella flexneri III Vaccine. V. Final Report of Cultural Results, 4 April 1950.

Bilateral Symmetry of Dental Caries, 6 April 1950. (I. Caries Incidence)

The Effect of Controlled Water Consumption of Dental Caries in White Rats, 24 April 1950.

Studies on the Shwartzman Phenomenon, 19 May 1950. (I. The Inhibitory Action of Nitrogen Mustard (HN_2))

Potassium Tolerance in Various Animal Species, 22 May 1950.

Observations on the Pre-Erythrocytic Stages of Plasmodium relictum, P. cathemerium, and P. gallinaceum in Various Birds, 26 May 1950.

Development Studies of Personnel Dosimeters for Ionizing Radiation, 29 May 1950. (1. Background and Preliminary Data on the Use of Activated Potassium Bromide Crystals)

A Multiple Choice Box Using Light Aversion as Motivation, 6 June 1950.

The Biochemical, Cellular, and Bacteriologic Changes in Thoracic Duct Lymph of Dogs Exposed to Total Body Irradiation, 22 June 1950.

A Technique for Sampling Lymph in Unanesthetized Dogs by Means of an Exteriorized Thoracic Duct-Venous Shunt, 18 July 1950.

Medical Research Laboratory, U. S. Naval Submarine Base, New London, Conn.

A Revision of the Navy Pitch-Memory Test, 5 April 1950.

Review of Research and Development in Examination for Aptitude for Submarine Training 1942 to 1945, 22 May 1950.

Naval Medical Research Unit No. 3, Cairo, Egypt.

Some Observations on Enteric Infection in a Nile Delta Village, 31 December 1949.

The Relative Incidence of Typhoid and the Paratyphoid Fevers in Egypt with a Note on Predominating Phage Types of Salmonella typhi, 8 June 1950.

Naval School of Aviation Medicine, NAS, Pensacola, Fla.

Electronic Radiography by Transmission Using Radioactive Monolayers, 15 May 1950.

Quantitative Radioautography Using Radioactive Monolayers as Standards, 26 May 1950.

Naval School of Aviation Medicine, NAS, Pensacola, Fla., and The Ohio State University Research Foundation.

The Pressure in the Oral Cavity in the Production of Consonants, 5 May 1950.

Formal Spoken Vocabulary of College Students, 5 May 1950.

The Intrinsic Intensity of Oral Phrases, 5 May 1950.

Naval Medical Field Research Laboratory, Camp Lejeune, North Carolina.

Principal Larval and Adult Habitats of Anopheles farauti Lav. in the British Solomon Islands, 12 May 1950.

Sea-Water and Synthetic Detergents, 12 May 1950.

Field Testing of a Surgical Operating Light, 5 June 1950.

Testing of an Experimental Dental Emergency Kit, 5 June 1950.

Field Testing of Two Portable, Collapsible Field Latrines, 6 June 1950.

Evaluation of Modified Leg Splint Set, 6 June 1950.

Field Testing of Supplementary Medical Aid Packages, 6 June 1950.

Field Testing of a Stereoscopic Film Viewer, 7 June 1950.

Field Test of X-Ray Cassette Changer, 7 June 1950.

Field Testing of a Portable X-Ray Storage Bin, 7 June 1950.

Evaluation of Insecticide Bearing the Trade-Name "Itso," 8 June 1950.

Field Comparison of Fiber-Glass, Plastic and Canvas-Type Litters, 8 June 1950.

Evaluation of Two Hand-Operated Larviciding Sprayers, 9 June 1950.

Suitability of Nesting Utensils for Field Use, 9 June 1950.

Field Testing of Lightweight Operating Table, 30 June 1950.

Field Test of Experimental Dental Operating [illegible], Field, 30 June 1950.

Field Testing of First-Aid Kit, Arctic, 30 June 1950.

Field Testing of Cradle Hospital Bed and Cot Lightweight, Field, 30 June 1950.

Field Testing of Lightweight, Experimental Hospital Beds, 30 June 1950.

Note on a Method for Producing Experimental Helmet Models in Plastic, 30 June 1950.

Note on the Use of Surface Active Agents in the Reconstitution of Dried Milk Powders, August 1950.

Positive and Alternating Positive-Negative Pressure Resuscitation from Curare Poisoning, August 1950.

Note: Those interested in seeing copies of the complete reports should address their request to the research activity from which the report originates.

* * * * * *

Course in Blood Bank Technic for Officers of the Nurse Corps: The Bureau Of Medicine and Surgery announces the establishment of a program of instruction in Blood Bank Technic for Nurse Officers, U. S. Navy, at the U. S. Naval Medical School, National Naval Medical Center, Bethesda, Maryland.

The program of instruction will include courses of 3 months' duration, the first course to begin 5 September 1950, and at designated intervals thereafter. The curriculum will include instruction in serology and blood collection (general), supplemented by practical experience in the Blood Bank and the Blood Donor Center at the Medical Center. Announcement of the dates of future courses to be given under this program will be made in forthcoming issues of the Medical News Letter.

Applications for this course should be directed to the Chief, Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C., attention Code 343. (Professional Div., BuMed)

* * * * * *

Lectures on Atomic Explosion: A series of indoctrination lectures on Atomic Explosion with Medical Aspects has been compiled by the Armed Forces Special Weapons Project and published under the title "Radiological Defense," Volume III. A limited number of copies are available to medical officers of the U. S. Navy. Requests should be addressed to Chief, Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C., attention Code 74. (Atomic Defense Div., BuMed)

* * * * * *

From the Note Book

1. Investigators are reporting good results from the use of cortisone in opthalmic diseases associated with rheumatoid arthritis. Studies are being conducted of the use of this hormone in intra-ocular inflammations not associated with arthritis. (Proc. Staff Meet., Mayo Clinic, 2 Aug. '50)

2. Investigators have reported failure of absorption of aureomycin and terramycin administered as a retention enema. (Proc. Staff Meet., Mayo Clinic, 2 Aug. '50)

3. Further study of the psychiatric aspects of treatment of painful phantom limb are being conducted. (Proc. Staff Meet., Mayo Clinic, 2 Aug. '50)

4. On 12 August 1950, the Board of Trustees of the A. M. A. endorsed the principles of several bills pending in Congress which provide for the registration and induction into service of certain technical and specialist personnel including physicians. The Board asserted that the Association will make every effort to see that adequate medical care is provided for members of the Armed Services, etc. (Editorial, J. A. M. A., 19 Aug. '50)

5. An evaluation of reported poisonings by acetylsalicylic acid has been published. (New England J. Med., 27 July '50)

6. Investigators report that in the absorption and excretion of rutin and related flavonoid substances it is unlikely that the substances are vitamin-like in that they exert any specific chemical or therapeutic effect. (J. A. M. A., 19 Aug. '50)

7. Family studies in preventive pediatrics appear in New England Journal of Medicine of 10 Aug. '50.

8. Allergic reactions from the ingestion or intravenous injection of cane sugar (sucrose) should be considered in food allergy reactions. (J. Lab. and Clin. Med., Aug. '50)

9. An O. N. R. contract report on Preservation of Dried and Frozen Plasma indicates that:

1. Plasma dried from the frozen state and preserved in glass bottles, rubber stoppered for period of up to 9 years and 4 months show good preservation of proteins, variable and generally poor preservation of prothrombin, variable but generally fair preservation of complement, provided that the moisture is less than 1 percent. The deciding factor appears to be the quality of the stopper and and its state of preservation.

2. Plasma preserved from the frozen state for a period of 9 years and 4 months regenerated with .1 percent citric acid given to patients has shown freedom from untoward reactions.

3. Plasma dried from the frozen state and containing mercurial preservative can be regenerated, irradiated, and administered to patients without untoward reaction. (M. M. Strumia)

10. The A. M. A. has made a study of medical care in England under the National Health Service. (J. A. M. A., 19 Aug. '50)

* * * * * *

BUMED CIRCULAR LETTER 50-88 14 August 1950

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations

Subj: Instructions for Collection of Air and Breath Samples for Radon Content

Ref: (a) NCPI 88.9 -- Encl. 2

Encl: (1) Indications and instructions for the collection of air samples for the determination of radon content

This letter with enclosure appears in the 15 August 1950 Navy Department Bulletin. The letter and enclosure is promulgated for the instruction and guidance of all activities engaged in handling of radium in any form.

* * * * * *

BUMED CIRCULAR LETTER 50-89 16 August 1950

From: Chief, Bureau of Medicine and Surgery
To: All Naval Training Centers, Marine Corps Recruit Depots, and Other Stations Designated by the Bureau

Subj: Submission of Psychiatric Unit Report

Ref: (a) Paragraph 5142, MMD, 1945

Encl: (1) Copies of NAVMED-1317, Psychiatric Unit Report

1. The submission of subject report in letter form required by reference (a) shall be discontinued.

2. Effective immediately, this report shall be submitted each week as of midnight Saturday on NAVMED-1317, Psychiatric Unit Report (enclosure (1)).

3. Additional copies of enclosure (1) shall be requested from the Bureau. C. A. Swanson

* * * * * *

BUMED CIRCULAR LETTER 50-90 22 August 1950

To: All Ships and Stations

Subj: Medicinal Gases and Cylinders; Color Marking and Identification of

Ref: (a) BuMed C/L No. 41-59
(b) BuMed C/L No. 47-73
(c) BuMed C/L No. 47-125
(d) BuMed C/L No. 47-139
(e) Military Standard Color Code for Compressed Gas Cylinders and Pipelines, MIL-STD-101, 14 July 1949

1. References (a) through (d) are hereby cancelled and superseded.

Reference (e) has been approved and published and the standard color code is mandatory for use effective 1 January 1951. Requests for copies of reference (e) should be made to the Commanding Officer, Naval Supply Center, Norfolk 11, Virginia.

3. It is realized that some changes in existing color markings of cylinders will be involved in the adoption of this new standard and the attention of all concerned is invited to the resultant potential danger during the transition period. All Medical Department personnel employing medicinal gases shall positively identify gases employed by means of the written identification on each cylinder. The color identification alone may be utilized to assist in storage, handling, and local issue procedures only, but not for positive determination of the medicinal agent to be employed in the treatment of patients.

4. It is recommended that locations used for the storage of medicinal gases in cylinders be provided with a color chart identifying the various gases according to the colors on the cylinders. These cylinders should be properly secured in racks or fastened in an upright position so as to prevent accidental upset with resulting damage to cylinder or cylinder valve. Valve bonnet caps shall be attached to cylinders at all times, except when in actual use.

5. Medicinal gases and gas cylinders shall be procured as non-standard medical items from General Stores under the cognizance of the Bureau of Supplies and Accounts, if available, otherwise by local purchase from commercial sources under local program allotment. Empty cylinders should be furnished for refill, if available, and should be returned with the valve bonnet caps firmly attached to prevent damage to the valves in transit. Cylinders excess to the needs of activities shall be promptly disposed of as directed in the Bureau of Supplies and Accounts Manual. C. A. Swanson

* * * * * *

BUMED CIRCULAR LETTER 50-91 22 August 1950

JOINT LETTER

From: Chief, Bureau of Medicine and Surgery
Chief, Bureau of Naval Personnel
Commandant of the Marine Corps

To: All Ships and Stations

Subj: Venereal Disease; an Agreement on Measures for the Control of

Ref: (a) Joint BuMed-BuPers ltr (41-2064)(BuMed Cir Ltr No. 41-10); Cumulative Edition NDB, 1948, page 583
(b) Interviewer's Aid for VD Contact Investigation, NavMed P-1288 (Revised 5-49), page 10
(c) General Order 18

Encl: (1) The Eight-Point Agreement of 1948

1. Enclosure (1) supersedes the Eight-Point Agreement of 1940, reference (a), and the New Eight-Point Agreement of 1946, published in reference (b). Reference (a) is hereby cancelled.

2. Reference (c) outlines the policy of the Department of the Navy in the repression of prostitution and control of venereal disease. The Eight-Point Agreement forms the basis for coordinated venereal disease control, and outlines the policy and responsibilities of civil communities as well as the Armed Forces. Strict compliance by all commands is directed.

C. A. Swanson J. W. Roper C. B. Cates

ENCLOSURE (1)

THE EIGHT POINT AGREEMENT OF 1948

AN AGREEMENT OF MEASURES FOR THE CONTROL
OF VENEREAL DISEASES
NOVEMBER, 1948

It is recognized that the following services should be developed by state and local health and law enforcement agencies in cooperation with the Public Health Service of the Federal Security Agency, the Coast Guard of the Treasury Department, The Departments of the Army, Navy and the Air Force of the National Defense Establishment, and interested voluntary organizations:

(1) The Armed Services and the Coast Guard will provide early diagnosis and adequate treatment for military personnel infected with venereal disease.

(2) Health departments will provide adequate case finding, diagnostic, treatment and case holding procedures for the venereal diseases in the civilian population.

(3) The civilian contacts of military personnel infected with venereal disease will be determined, and reported by officers of the Armed Services[1/] and the Coast Guard through medical channels to State and/or local health authorities only.

(4) The military contacts of infected civilians should be reported to appropriate officers of the Armed Services and the Coast Guard by local or State health authorities.

(5) Recalcitrant infected persons should be isolated during the period of communicability. In civilian populations it is a duty of local health authorities to obtain any needed assistance of the law enforcement authorities in enforcing such isolation.

(6) The law enforcement authorities are responsible for the repression of commercialized and clandestine prostitution. In order to limit the spread of venereal infections from these sources, the local health departments and State health departments, the U. S. Public Health Service, the Armed Services and the Coast Guard will cooperate directly or through Armed Forces Disciplinary Control Boards with law enforcement authorities in repressing prostitution and allied vice conditions, by providing them with the necessary available information relative to places and means of procurement and/or exposure, as may assist them in carrying out their responsibilities.

(7) An aggressive continuous program of education should be carried on among military personnel and the civilian population regarding the dangers of promiscuous sexual conduct and venereal diseases, methods of preventing venereal infections and the action which should be taken by a person who suspects that he is infected.

(8) State and Territorial health officers, the Public Health Service of the Federal Security Agency, the Coast Guard of the Treasury Department, the Departments of the Army, the Navy, and the Air Force of the National Defense Establishment, all invite the assistance of representatives of the American Social Hygiene Association, affiliated social hygiene societies and of other official and voluntary welfare organizations or groups, in developing and stimulating public support for the above measures.

June 21 1949 /s/ G. H. Foley, Jr.
Acting Secretary of the Treasury

/s/ Louis Johnson 15 Apr 1949
Secretary of Defense

Mar 10 1949 /s/ J. Donald Kingsley
Acting Federal Security Administrator

/s/ R. H. Hutcheson Pres.
Association of State and Territorial Health Officers

1/ Familial contacts of military personnel will be reported in accordance with existing Armed Forces directives.

* * * * * *

BUMED CIRCULAR LETTER 50-92
ARMY REGULATIONS 40-538
AIR FORCE REGULATION 67-40

DEPARTMENTS OF THE ARMY,
THE NAVY, AND THE AIR FORCE
WASHINGTON 25, D. C.

JOINT LETTER

7 August 1950

MEDICAL SERVICE

PROPERTY EXCHANGE AND ACCOUNTABILITY IN EVACUATION OF PATIENTS

	Paragraph
General	1
Application	2
Property	3
Responsibility of transferring facility	4
Responsibility of receiving facility	5
Responsibility of carrier service	6
Action by Veterans Administration	7

1. General. - a. It is imperative that there be within the Department of Defense a uniform system of property exchange, which not only is simple in operation, but which is feasible for use during time of peace and during a period of national emergency.

b. These regulations establish the procedure for accounting for medical items involved in the evacuation of patients by all modes of transportation.

2. Application. - The provisions of these regulations apply in all cases in the evacuation of patients and are applicable both in the continental United States and in oversea commands.

3. Property. - Army, Navy, and Air Force facilities engaged in the evacuation of patients will establish and maintain, in accordance with the instructions of the applicable service, adequate stock levels of special items required in the evacuation of patients.

4. Responsibility of Transferring Facility. When patients are transferred from one facility to another, the property necessary for their comfort and/or safety will accompany them. Property will be accounted for by one of the following means, whichever is considered most feasible:

a. Exchanged items. Where circumstances permit, items involved will be exchanged item for item. In such instances no change of property accountability will be involved and no receipt will be required or given.

b. Termination of accountability. - Items will be listed by the accountable officer on an issue slip or similar document which may be filed as a voucher for

dropping the property, provided it contains or is supported by the following:

(1) Certificate by the accountable officer or his authorized representative showing date of issue and stating that no replacement was received.

(2) Copy of transfer order of patient.

(3) Hand receipt signed by the attendant receiving the patient.

c. Veterans Administration hospitals. - Property transferred with patients evacuated to Veterans Administration hospitals may be exchanged or dropped from accountability in accordance with a or b above. When the property is returned by the Veterans Administration in accordance with paragraph 7, it will be taken up in the accounts of the receiving agency by means of a turn-in slip showing date of receipt and source from which received.

5. Responsibility of Receiving Facility. - a. Upon arrival of patient at destination facility, the items in his possession which were dropped from accountability in accordance with paragraph 4b will be taken up in the accounts of the receiving facility.

b. It is essential that all excesses of property, resulting from above action, be reported promptly to the supply authority of the local command for disposition instructions. This action is necessary so that items required for evacuation of patients will be returned expeditiously to supply channels in accordance with existing instructions covering excesses.

6. Responsibility of Carrier Service. - a. When the determination has been made as to the means of evacuation to be utilized, the originating facility will notify the carrier agency engaged in evacuation as to the number and type of patients involved. The carrier agency will then furnish such special equipment peculiar to mode of travel as may be required for the type of patient carried.

b. The carrier service will be responsible, but not accountable, for all items of supply referred to in paragraph 4b,while the patient is within its control.

c. In off-loading of patients, it will be the responsibility of the carrier service to make such arrangements as will insure that special items of supply furnished by the carrier remain within its control.

7. Action by Veterans Administration. - a. The Veterans Administration will return to the nearest military installation of the service from which the patient was transferred, all items received with the patient.

b. Transportation costs involved in the return of such property will be borne by the appropriate service; however, approval for obligating funds for shipment will be obtained by the Veterans Administration from the owning service prior to effecting shipment.

BY ORDER OF THE SECRETARIES OF THE ARMY, THE NAVY, AND THE AIR FORCE:

OFFICIAL:
EDWARD F. WITSELL
Major General, USA
The Adjutant General

J. LAWTON COLLINS
Chief of Staff, United States Army

OFFICIAL:
CHARLES WELLBORN, JR.
Deputy Chief of Naval Operations
(Administration)

C. A. SWANSON
Rear Admiral (M. C.)
Chief of the Bureau of Medicine
and Surgery
Department of the Navy

OFFICIAL:
L. L. JUDGE
Colonel, USAF
Air Adjutant General

HOYT S. VANDENBERG
Chief of Staff, United States Air
Force

* * * * * *

BUMED CIRCULAR LETTER 50-93 25 August 1950

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having Medical Department Personnel Aboard

Subj: Syphilis; Annual Evaluation of Personnel with a History of

Ref: (a) BuMed Cir Ltr 49-147
(b) NavMed-A (Rev. 9-50) Annual Syphilis Report

Encl: (1) Outline of Procedure for Annual Evaluation of Individuals with a History of Syphilis and their Health Records
(2) Supplement 23 to Journal of Venereal Disease Information, "The Diagnosis of Syphilis by the General Practitioner"
(3) A "Guide for Diagnosis, Treatment and Follow-up of Veneral Diseases," NavMed P-1319

This letter with enclosures cancels reference (a) and directs that an annual evaluation of all personnel having a history of syphilis be made by a medical officer on or before 31 December each year. Enclosure (1) is an outline of the recommended method of accomplishing an annual evaluation. Reference (b), NAVMED-A (Rev. 9-50) will be available at all district publications and printing offices not later than 1 November 1950.

* * * * * *

BUMED CIRCULAR LETTER 50-94 29 August 1950

From: Chief, Bureau of Medicine and Surgery
To: Medical Department Research Activities

Subj: Publication of Research Reports; Expenses in Connection with

Ref: (a) Art. 20-8(3), Manual of the Medical Department

This letter states that the Bureau of Medicine and Surgery is making funds available to defray the expenses involved in preparation of original research reports for publication (including charts, graphs, illustrations, and additional charges for extra pages) and for the purchase of reprints. The letter directs that requests for authority to incur such expenses shall be submitted to the Bureau by letter and describes the procedure necessary in order to obtain such approval, and the procedure necessary for the payment of the authorized services.

* * * * * *

NAVY DEPARTMENT
BUREAU OF MEDICINE AND SURGERY
WASHINGTON 25, D. C.

OFFICIAL BUSINESS

Permit No. 1048
NavMed-369 - 8/50

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300